

Comments on Victorville Red Light Camera Enforcement Program

By Jay Beeber, Executive Director, Safer Streets L.A., Member ITE

Background

Safer Streets L.A. is a grassroots organization dedicated to furthering the interests of the motoring public through the adoption of scientifically sound and sensible transportation and traffic laws. We believe that accurate information and critical thinking are crucial to implementing sound public policy. Towards that end, we strive to provide the public and elected representatives with well researched and verifiable data. Our goal is to counter long-held misconceptions and misinformation with solid facts in order to promote scientifically based solutions to motorist and pedestrian safety issues. Safer Streets L.A. provides this information on a voluntary basis and is not paid to interact with elected officials.

Our goal in forwarding you the following information is to provide you with additional information on the use of photo enforcement in Victorville, California. We hope that this information proves useful in your deliberations as to whether or not to continue the red light camera program.

About the Author

Jay Beeber is the Executive Director of Safer Streets L.A. and a research fellow with the Reason Foundation concentrating on traffic safety and enforcement. He also serves on the City of Los Angeles' Pedestrian Advisory Committee and has written numerous scientific studies on traffic related safety issues. Most recently, he served on the subcommittee of the California Traffic Control Devices Committee studying changes in the way traffic signals are timed in the state of California. These efforts resulted in new signal timing protocols recently incorporated into the 2014 California Manual on Uniform Traffic Control Devices (CAMUTCD).

Introduction

The following comments pertain to the Red Light Camera Program in the City of Victorville, CA. We comment on the program in general and the staff report submitted for the City Council meeting on March 17, 2015.

Accident statistics cited in these comments were compiled from the California Highway Patrol's Statewide Integrated Traffic Records System (SWITRS) database. The SWITRS database serves as a means to collect and process data gathered from collision scenes by multiple police agencies throughout the state. Data for calendar year 2013 is mostly complete, however some data may be missing and therefore additional collision data may become available. The data for 2014 is incomplete and although included in these comments, should be considered only partial year data.

In evaluating the effectiveness of RLC programs, attention must be given to analyzing relevant types of collisions. Since red light cameras target drivers who cross the limit line after the light has turned red, collisions for which the primary collision factor is listed in the database as a violation of California Vehicle Codes 21453(a) (circular red signal) and 21453(c) (red arrow signal) provide the most accurate

information about the possible benefits of photo enforcement as these types of collisions are the only type of collision that can reasonably be expected to be reduced through the use of red light cameras.

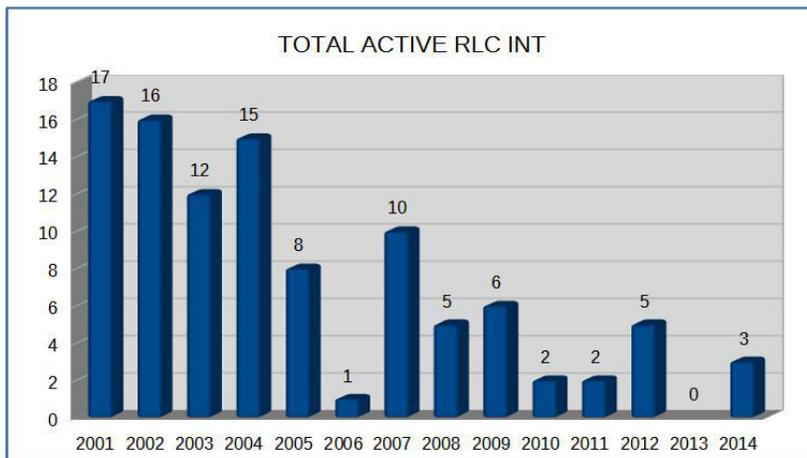
However, in the staff report submitted to council, the author has mixed the data for red light running collisions with other categories of collisions such as failure to yield and unsafe speed. The author also mistakenly cites “broadside collisions” and “head on collisions” as categories used for the analysis. Since not all broadside collisions (or head on collisions) are caused by a red light violation and not all red light violations result in a broadside collision (or head on collisions), using these categories rather than only the more specific category of collisions caused by red light running, provides erroneous and meaningless results. Additionally, care must be taken when drawing specific conclusions, as numerous factors may determine whether red light running collisions have increased or decreased from year to year over the study period, including traffic volume, signal timing, weather, driver impairment, distraction, and fatigue, etc. The staff report does not take any of these factors into account in the analysis.

Staff Reported Collisions

The staff report includes two charts showing collision counts at both RLC and non-RLC intersections. We are unable to duplicate the results shown in the charts using any combination of data found in the collision database. For example, the chart on page 11 entitled “Count of all reported collisions by year using the commonly associated PCF's at intersections with RLC” shows a total of 8 collisions reported for 2014. Although unclear in the report, the collisions reported are most likely the three types listed on page 10, CVC 22350 (possibly only including Rear-end collisions), CVC 21801, and CVC 21453 (a) and (c). We reiterate here that including collision factors other than CVC 21453 (a) and (c) renders the data meaningless. Regardless, when we query the collision database for 2014 (partial year data), at the seven currently active red light camera intersections, we find 7 rear end collisions with a PFC of 22350, 3 collisions with a PFC of 21453 (a) & (c), and 4 collisions with a PFC of 21801. This totals at least 14 collisions, not 8. Also, we find an additional 3 rear end collisions due to other than a PFC of 22350 which should also be included in the total. Considering the SWITRS database for 2014 is mostly incomplete, it is likely that the collision numbers in the staff report are not accurate and no conclusion as to the effectiveness of the red light camera program should be drawn from them.

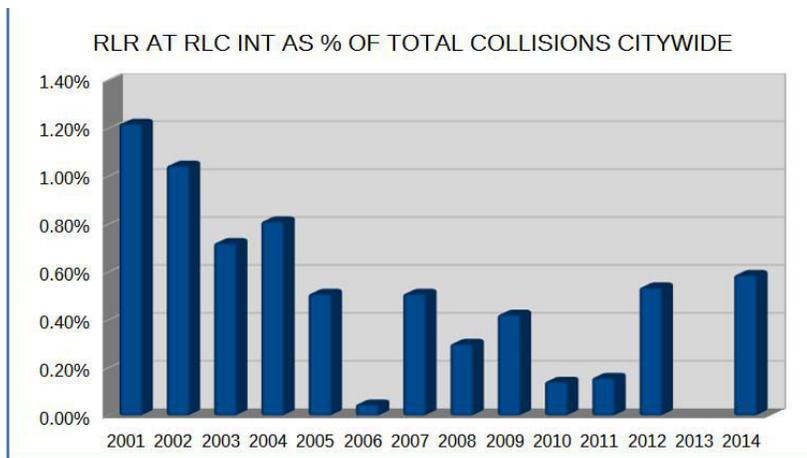
Our Collision Analysis

We conducted an analysis of red light running collisions both at red light camera intersections and throughout the city. The chart below shows the collision trend at the currently active red light camera intersections.



Note that the number of red light running collisions was trending downward prior to the installation of the cameras and likely would have continued regardless of their installation. Also, note that the year with the second lowest number of collisions was 2006, two years before installation of the cameras.

In order to ascertain whether reduced numbers of red light running collisions might be associated with the presence of the cameras or part of an overall reduction in collisions throughout the city, we looked at the number of red light running collisions as a percentage of all collisions each year in Victorville. The chart below shows this trend.



This analysis shows two important points. First, red light running collisions at red light camera intersections as a percentage of all collisions citywide were trending downward before the red light cameras were installed. Second, since the cameras were installed, red light running collisions at red light camera intersections have started to trend back up. If the cameras were effective in reducing the rate of red light running collisions, then the trend should not be upwards after installation of the cameras. Further, as shown on page 14 of the staff report, red light running citations have increased since 2010. If red light cameras changed driver behavior as claimed, the number of citations should be decreasing, not increasing.

The above analysis shows that contrary to a simplistic reporting of the raw numbers of collisions, analysis of the effectiveness of enforcement cameras is much more complicated. A further, more detailed analysis is necessary to determine if the presence of the red light cameras has made any improvement in intersection safety in Victorville.

Violation Analysis

We also conducted a cursory analysis of citations at red light camera intersections. We note that the intersections with the highest numbers of violations are westbound Bear Valley at Amargosa and eastbound Bear Valley at Industrial. We therefore concentrated initially at these locations.

Bear Valley at Amargosa

The vast majority of violations at this intersection are for left turns. This is caused by a yellow interval too short for the actual speed of drivers in the turn pocket. Drivers approaching this turn travel in a straight through lane which turns into a left turn lane with no transition or “taper”. As a result, drivers

are likely traveling at or near the speed limit on approach. The yellow time necessary for drivers is based on the approach speed on the approach, not during the turning maneuver at the intersection.

Although the CAMUTCD previously permitted yellow intervals as short as 3.0 seconds regardless of the length of the turn pocket or speed of approaching drivers, that explicit permission has been removed and traffic engineers are now required to set yellow times for turning lanes based on the actual speed of the approaching traffic. Based on the extremely high numbers of violations occurring in the left turn lane at this intersection approach, it is clear that the current yellow interval is not adequate for the approaching traffic nor in compliance with the new protocols which must be implemented at red light camera intersections no later than August 1, 2015. The new yellow time which will be necessary at this location will significantly reduce the number of violations which occur and the number of tickets being issued. Therefore, any consideration of a renewal or extension of the red light camera contract should take this factor into account. According to the staff report, the City of Victorville has an unpaid balance to Redflex in the amount of \$1,719,743.00. With these necessary changes (and those noted below), that unpaid balance can be expected to grow significantly larger.

Bear Valley at Industrial

The vast majority of violations at this intersection are due to the yellow interval which is too short for the actual speed of the approaching traffic. The speed limit at this location is 45 mph. However, based on the configuration of the roadway, traffic is likely traveling at 10 mph to 15 mph above this speed. As explained above, the new, more realistic yellow timing protocols must be implemented at red light camera intersections no later than August 1st. Again, this will reduce the number of violations and tickets and increase the unpaid balance due Redflex.

In addition, Council should inquire as to the reason for the significant increase in violations which occurred at this location beginning in September 2014. Violations have almost tripled, which is due to some change in the engineering of the intersection, not to driver behavior. This tripling of violations should be of great concern to anyone interested in traffic safety at this intersection and immediate corrective action should be implemented.

As described above, the new yellow interval protocols may also impact other red light camera intersections in Victorville. No contract renewal or extension should be considered without fully understanding the changes that will be necessary and how that will impact the growing debt being incurred to Redflex by the city.

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